1. What is the **best** way to describe the domain of the scenario below?

   Veronica needs to prepare 170 lbs of blended coffee beans to sell for $4.71 per pound. She has a high-quality bean that sells for $6.00 a pound and a low-quality been that sells for $3.25 a pound.

   A. Subset of the Rational numbers

   B. Proper subset of the Real numbers

   C. Subset of the Natural numbers

   D. Subset of the Integers

   E. There is no restricted domain in this scenario

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2. Using the situation below, construct a linear model that describes the cost of the coffee beans $C(h)$ in terms of the weight of the low-quality coffee beans h.

   Veronica needs to prepare 110 of blended coffee beans selling for $5.29 per pound. She has a high-quality bean that sells for $5.85 a pound and a low-quality bean that sells for $4.71 a pound.

   A. $C(h) = 4.71h$

   B. $C(h) = -1.14h + 643.50$

   C. $C(h) = 1.14h + 518.10$

   D. $C(h) = 5.28h$

   E. None of the above.

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3. What is the **best** way to describe the domain of the scenario below?

   Two UFPD are patrolling the campus on foot. To cover more ground, they split up and begin walking in different directions. Office A is walking at 3 mph while Office B is walking at 5 mph.

   A. Subset of the Rational numbers

   B. There is no restricted domain in this scenario

C. Subset of the Integers

D. Proper subset of the Real numbers

E. Subset of the Natural numbers

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4. For the information provided below, construct a linear model that describes the total distance of the path, D, in terms of the time spent on a particular path *if we know that the time spent on each path was equal.*

    A bicyclist is training for a race on a hilly path. Their bike keeps track of their speed at any time, but not the distance traveled. Their speed traveling up a hill is 5 mph, 10 mph when traveling down a hill, and 7 mph when traveling along a flat portion.

    A. $22t$

    B. $350t$

    C. $0.443t$

    D. The model can be found with the information provided, but isn't options 1-3

    E. The model cannot be found with the information provided.

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5. For the information provided below, construct a linear model that describes her total income, I, as a function of the number of months, x she is at UF.

    Aubrey is a college student going into her first year at UF. She will receive Bright Futures, which covers her tuition plus a $1000 educational expense each year. Before college, Aubrey saved up $6000. She knows she will need to pay $800 in rent a month, $50 for food a week, and $56 in other weekly expenses.

    A. $I(x) = 1000x + 6000$

    B. $I(x) = 7000$

    C. $I(x) = 6000x + 1000$

    D. $I(x) = 7000x$

E. None of the above.

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6. A town has an initial population of 100000. The town's population for the next 9 years is provided below. Which type of function would be most appropriate to model the town's population?

Year	1	2	3	4	5	6	7	8	9
Pop	100000	100027	100043	100055	100064	100071	100077	100083	100

A. Linear

B. Non-Linear Power

C. Logarithmic

D. Exponential

E. None of the above

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7. Using the situation below, construct a linear model that describes the cost of the coffee beans $C(h)$ in terms of the weight of the low-quality coffee beans h.

Veronica needs to prepare 180 of blended coffee beans selling for $5.02 per pound. She has a high-quality bean that sells for $6.04 a pound and a low-quality bean that sells for $4.23 a pound.

A. $C(h) = 5.13h$

B. $C(h) = 4.23h$

C. $C(h) = 1.81h + 761.40$

D. $C(h) = -1.81h + 1087.20$

E. None of the above.

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8. For the information provided below, construct a linear model that describes her total costs, C, as a function of the number of months, x she is at UF.

Aubrey is a college student going into her first year at UF. She will receive Bright Futures, which covers her tuition plus a $600 educational expense each year. Before college, Aubrey saved up $8000. She knows she will need to pay $1000 in rent a month, $60 for food a week, and $48 in other weekly expenses.

A. $C(x) = 8600x$

B. $C(x) = 1108$

C. $C(x) = 8600$

D. $C(x) = 1108x$

E. None of the above.

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9. A town has an initial population of 70000. The town's population for the next 9 years is provided below. Which type of function would be most appropriate to model the town's population?

Year	1	2	3	4	5	6	7	8	9
Pop	70080	70160	70320	70640	71280	72560	75120	80240	90480

A. Linear

B. Non-Linear Power

C. Logarithmic

D. Exponential

E. None of the above

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10. For the information provided below, construct a linear model that describes the total distance of the path, D, in terms of the time spent on a particular path *if we know that the time spent on each path was equal.*

A bicyclist is training for a race on a hilly path. Their bike keeps track of their speed at any time, but not the distance traveled. Their speed traveling up a hill is 5 mph, 10 mph when traveling down a hill, and 8 mph when traveling along a flat portion.

A. $0.425t$

B. $400t$

C. $23t$

D. The model can be found with the information provided, but isn't options 1-3

E. The model cannot be found with the information provided.